

# Medtronic

## Living with the Micra™ leadless pacemaker





Have you  
or a loved one  
been diagnosed with a  
slow heartbeat (bradycardia)?

If so, this brochure can help you understand your heart condition and treatment options. It provides basic information about bradycardia. It also explains leadless pacemakers and what to expect before and after you have one placed.

Ask your doctor about your unique medical condition and treatment options.



The Micra pacemaker is the world's smallest pacemaker<sup>1</sup> – leaving no bump under the skin, no chest scar, and requiring no lead. The Micra pacemaker is completely within the heart and provides therapy without a visible or physical reminder of a medical device.

## What is bradycardia?

Bradycardia is a condition in which the heart beats too slowly. A healthy heart beats 60 to 100 times per minute, pumping about 284 liters of blood every hour. When you have bradycardia, the heart beats fewer than 60 times per minute. At that rate, the heart may not be able to pump enough oxygen-rich blood to the body during activity or exercise. As a result, you might feel dizzy, tired, short of breath, or have fainting spells.

### Diagnosing bradycardia

Only a doctor can determine if you have bradycardia and, if so, how far it has progressed. To rule out or confirm the diagnosis of bradycardia, one or several diagnostic tests may be ordered, depending on the suspected heart rhythm problem.

These tests may include:

- Electrocardiogram (ECG)
- Exercise ECG or stress test (measures your heart rhythm while you're engaged in a physical activity)
- Holter or event monitor
- Insertable cardiac monitor
- External loop recorder
- Tilt table test
- Electrophysiology study (EP study)

# Treating bradycardia

Treatment options differ depending on your bradycardia causes and symptoms. Your doctor might prescribe new medications, or adjust the doses of medications you are currently taking to restore your normal heart rate. If this fails to restore your normal heartbeat, a pacemaker can regulate your heart's rhythm.

A pacemaker is designed to mimic the heart's natural rhythm. By sending an impulse when the heart's rhythm is slow or interrupted, it effectively regulates the heart rate automatically, freeing you to enjoy your regular activities.



# How do pacemakers work?

A pacemaker is designed to mimic the heart's natural rhythm when there are disturbances, such as pauses, in the natural rhythm. The pacemaker has two main purposes – pacing and sensing:

- Pacing: A pacemaker will send an electrical impulse to the heart when the heart's own rhythm is too slow or interrupted.
- Sensing: A pacemaker will also "sense" (monitor) the heart's natural electrical activity. When the pacemaker senses a natural heartbeat, it will not deliver a pacing pulse.

## Traditional pacing system

Most pacemakers require a device (about the size of a tea bag) to be surgically implanted under your skin in the upper chest. The system also requires a lead or leads to be guided through the vein into the heart. The lead carries electrical signals from the pacemaker to your heart to help it beat regularly.



## Micra leadless pacemakers

The Micra leadless pacemaker is 93% smaller than traditional pacemakers.<sup>1</sup> It is comparable to the size of a large vitamin capsule, and the estimated average battery life for a Micra device is approximately 16-17 years.<sup>2</sup> How long your battery lasts depends on several factors, including the nature of your heart condition and how often your pacemaker provides therapy to your heart.

Unlike a standard pacemaker, it is implanted into the heart through a vein, typically in your leg, and does not require a lead. The miniaturized size and minimally invasive approach of a Micra pacemaker leaves no visible sign of a medical device under the skin. This can mean fewer post-implant activity restrictions and no obstructions to shoulder movement.



## Is a Micra pacemaker for every patient?

A Micra pacemaker is intended for patients with specific pacing needs. Talk to your doctor about the benefits and risks of a Micra pacemaker.



Traditional single-chamber  
pacemaker and lead



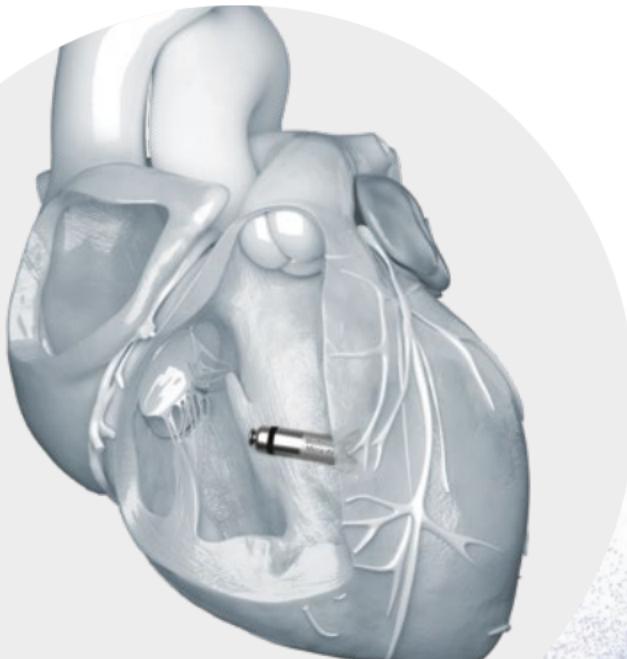
Micra leadless pacemaker



Vitamin

# How is a Micra pacemaker implanted?<sup>3</sup>

- Your doctor will insert a straw-like catheter system into a vein, typically near the upper thigh area of your leg.
- The catheter system moves the Micra pacemaker into the right ventricle of the heart.
- The Micra pacemaker is placed against the heart wall and secured with flexible tines (see image below).
- Your doctor tests the Micra pacemaker to ensure it is working properly.
- The catheter system is then removed.



# Remote monitoring for implanted heart devices

If you have an implanted heart device, ongoing care doesn't end at the implant. It's important to maintain a connection with your doctor or clinic for the life of your device. One of the best ways to do this is through remote monitoring.

Remote monitoring is a way for your implanted heart device to communicate with your doctor or clinic, potentially lowering the number of times you have to travel to your clinic for a device check.

To find out if remote monitoring is right for you, please talk to your doctor.

Scan the QR code to learn more about remote monitoring for an implanted heart device.



# Common questions

## Is it safe for me to have an MRI scan?<sup>3</sup>

A magnetic resonance imaging (MRI) scan is a type of medical imaging that uses magnetic fields to create an internal view of the body, which doctors use for diagnostic purposes. The Micra pacemaker was designed, tested, and approved to be used safely with MRI scanners under specific conditions. You can undergo an MRI scan as long as patient eligibility requirements are met. Please consult your heart doctor about these eligibility requirements.

## Can I travel?<sup>3</sup>

Yes. Make sure you carry your device ID card when traveling and tell airline security personnel that you have an implanted heart device.

Then, simply walk through security archways at a normal pace. Don't stop under or touch the archway as you pass through. Full-body scanners are safe to use as instructed. If a handheld wand is used, ask the security operator not to hold it over your device or wave it back and forth over your device.

You can show your device ID card to security personnel and ask for hand screening instead if you prefer.

## Can I use a cell phone?<sup>3</sup>

Yes. When talking on a mobile phone, keep the phone about six inches away from an implanted Micra pacemaker. We also recommend avoiding placing the mobile phone in a shirt or jacket pocket of the chest.

Many people with a pacemaker like Micra resume their normal daily activities after recovering from the implant procedure. There may be certain situations your doctor will ask you to avoid. Discuss your activity and lifestyle goals with your doctor and develop a plan that works best for you.

Visit [MRISureScan.com](http://MRISureScan.com) for questions about MRI scanning eligibility or about the scanning process. Heart doctors with questions should contact a Medtronic representative or Medtronic Technical Services.

### Are household appliances safe to use?<sup>3</sup>

Yes. Most household appliances and items are safe to use as long as they are properly maintained and in good working order. This includes microwave ovens, major appliances, electric blankets, and heating pads.



## Will magnets affect my Micra pacemaker?<sup>3</sup>

Items that contain magnets, such as magnetic therapy products, stereo speakers, and handheld massagers can temporarily affect the operation of a pacemaker.

Therefore, it is recommended to keep items containing magnets at least six inches away from an implanted pacemaker. We do not recommend the use of magnetic mattress pads and pillows because it is difficult to maintain a six-inch distance when using these items.

## How long will my Micra pacemaker last?<sup>3</sup>

A new Micra pacemaker is needed when battery power falls to a low level. Battery power is affected by many factors, including the nature of the heart condition. The estimated average battery life for a Micra device is approximately 16–17 years.<sup>2</sup> How long your battery lasts depends on several factors, including the nature of your heart condition and how often your pacemaker provides therapy to your heart.

The battery power is checked at each Micra leadless pacemaker follow-up appointment. The doctor or nurse will notify you when you need a new pacemaker.

When a new device is needed, the Micra device may be either simply turned off or removed from the body before a new Micra device or traditional pacemaker system is implanted. Your doctor will determine what is best for you.<sup>3</sup>

## Can I exercise? Can I go about my regular activities?<sup>3</sup>

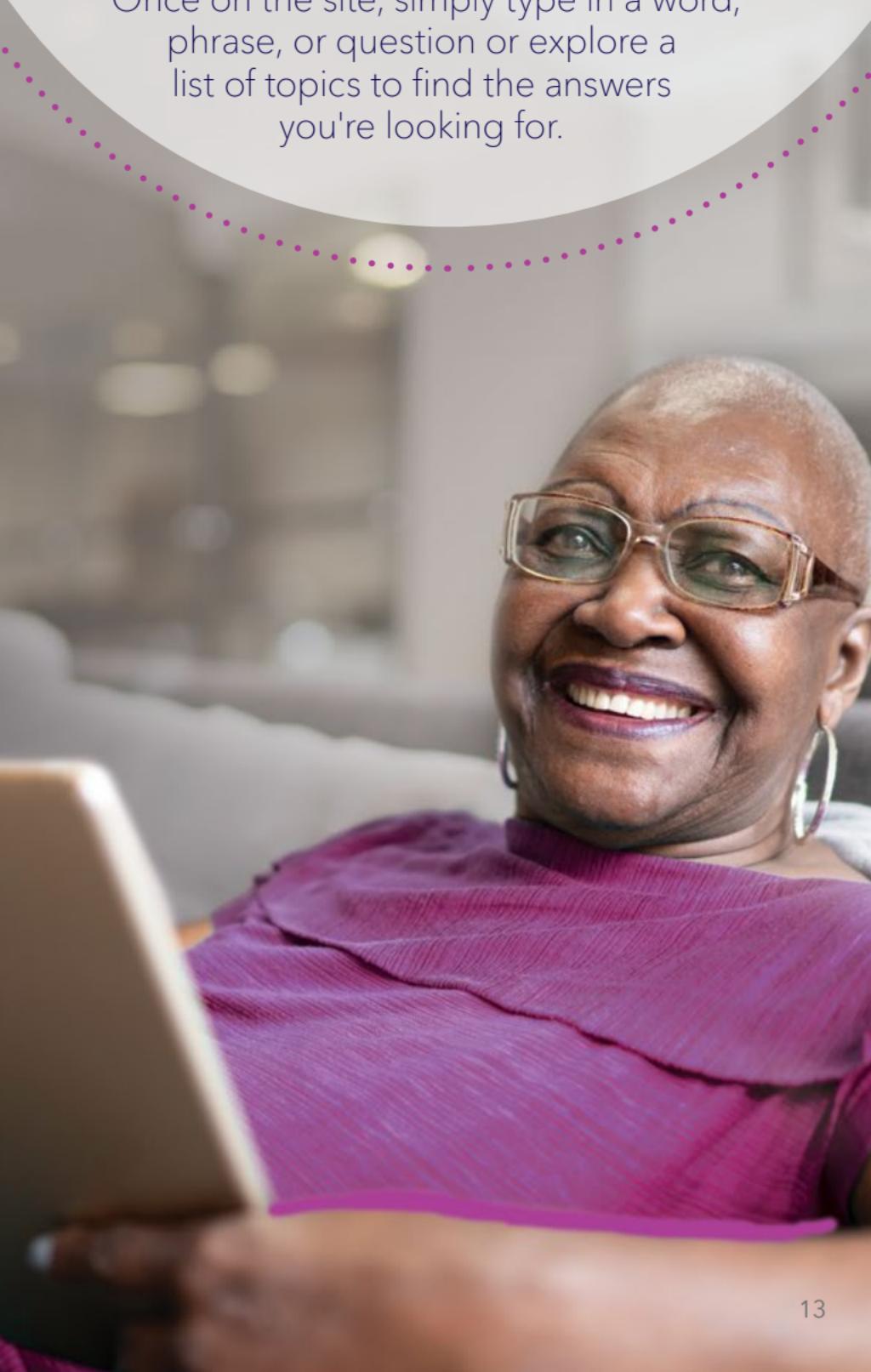
You should be able to return to your usual activities, as long as those activities do not exceed current fitness levels. Questions about specific exercises should be discussed with your physician.

# Get heart device answers



If you or a loved one have questions about living with a heart device, please visit [HeartDeviceAnswers.com](http://HeartDeviceAnswers.com) or scan the QR code above.

Once on the site, simply type in a word, phrase, or question or explore a list of topics to find the answers you're looking for.



# Additional resources

## Medtronic Patient Services

If you have a Medtronic cardiac device and want to learn more or have questions about living with an implantable defibrillator, please contact Medtronic Patient Services at 1-800-551-5544. Our Patient Services Specialists are available to assist you, Monday–Friday from 7 a.m. to 6 p.m. Central time.

## Medtronic.com/Micra

For in-depth information about the Micra leadless pacemaker, visit [Medtronic.com/Micra](http://Medtronic.com/Micra).



## **References**

- <sup>1</sup> Leick. Micra vs. Leadless and Transvenous Pacemaker Size Comparison. March 2023. Medtronic data on file.
- <sup>2</sup> Sheldon T, Escalante K, Fagan D. Device Longevity and AV Synchrony Algorithm Modeling of a Leadless Pacemaker Family: A Virtual Patient Analysis. January 2023. Medtronic data on file.
- <sup>3</sup> Micra™ AV Transcatheter Pacemaker Patient Manual. M994304A001 A. 2019-08-14.

## **Important Safety Information**

An implantable pacemaker system relieves symptoms of heart rhythm disturbances. They do this by restoring normal heart rates. A normal heart rate provides your body with the proper amount of blood circulation. The pacemaker system is intended for patients who need rate-adaptive pacing or chronic pacing. Risks associated with the Micra™ Transcatheter Pacing System (Micra) implant include, but are not limited to, complications at the surgical site, injury to the heart where the device is attached such as pericardial effusion (fluid around the heart) and/or sensitivity to the device material, failure to deliver therapy when it is needed, or receiving extra therapy when it is not needed. After receiving a Micra, you will have limitations with certain magnetic and electromagnetic radiation, electric or gas powered appliances, and tools with which you are allowed to be in contact. Once implanted, removal of the Micra after it has become encapsulated may be difficult because of the development of fibrotic tissue. At such time, your physician has the option of permanently turning off the Micra, and leaving it in the heart. This treatment is prescribed by your physician. This treatment is not for everyone. Please talk to your doctor to see if it is right for you. Your physician should discuss all potential benefits and risks with you. Although many patients benefit from the use of this treatment, results may vary. For further information, please call the Medtronic toll-free number at 1-800-551-5544 (7:00 a.m. to 6:00 p.m., Monday-Friday, CT) or see the Medtronic website at [medtronic.com](http://medtronic.com).

## Patient Services

Medtronic  
8200 Coral Sea St. NE MVC31  
Mounds View, MN 55112

Patient toll-free line:  
1.800.551.5544  
7:00 a.m. to 6:00 p.m. CT  
Monday-Friday

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